

six incisors, and at least six molars on each side; but as the rami had been fractured through the middle of the sixth alveolus, the number of grinders may have corresponded with those in the upper jaw of the *Toxodon*.

The most perfect of these fragments is figured in Pl. V. figures 1 and 4; figure 2 shows the form of the teeth in transverse section, and the disposition of the enamel upon the grinding surface of the molars on the right side, as restored from a comparison of the fractured teeth in the two rami. From the remains of the symphysis shown at fig. 4, it will be seen that the jaw was remarkably compressed, or narrow from side to side; while the rami (fig. 1.) were of considerable depth, in order to give lodgment to the matrices and bases of grinders enjoying uninterrupted growth.

The pulps of the six incisors in this lower jaw are arranged in a pretty regular semi-circle, whose convexity is downwards; the teeth themselves are directed forwards, and curved upwards, like the inferior incisors of the Rodentia. The form and degree of the curvature are shown in the almost perfect incisor (Pl. V. fig. 5) which corresponds with the left inferior incisor of the lower jaw, and was found in the same stratum, but belonged to another individual.

These incisors are nearly equal in size: they are all hollow at their base, and the indurated mineral substance impacted in their basal cavities well exhibits the form of the vascular pulps which formerly occupied them. Sufficient of the tooth itself remains in four of the sockets to show that these incisors, like the nearly perfect one (fig. 5), had only a partial investment of enamel; but though in this respect, as well as in their curvature and perpetual growth, they resemble the *dentesculprarii* of the Rodentia, they differ in having a prismatic figure, like the inferior incisors of the Sumatran Rhinoceros, or the tusks of the Boar. Two of the sides, viz., those forming the anterior convex and mesial surfaces of the incisor have a coating of enamel, about half a line in thickness, which terminates at the angles between these and the posterior or concave surface. In plate V. fig. 4, the enamel of the broken incisors is represented by short lines, showing the direction of its crystalline fibres; the white space immediately within the enamel shows the thickness of the ivory at the base of the tooth, the included gray substance represents a section of the formative matrix or pulp of the tooth, which was of the usual conical form: the inferior broken end of the incisor (fig. 5,) appears to have been distant about one-third from the apex of the pulp.

From the relative position of the bases or roots of these incisors, we may infer that they diverged from each other as they advanced forwards, in order to bring their broadest cutting surfaces into line. That they were opposed to teeth of a corresponding structure in the upper jaw is proved by the oblique chisel-like cutting surface of the more perfect incisor: and it is not without

interest to find that the presence of *dentesculprarii* at the anterior part of the mouth has not been necessarily limited to Mammalia of small size.

The position of the pulps of these incisors, in close proximity with the anterior grinders, corresponds with the position of the pulps of the incisors in the upper jaw of the *Toxodon*, and indicates, in conjunction with the size of the pulps, that a considerable extent of the inferior incisors was lodged in the substance of the anterior part of the jaw. It is most likely that no vertically directed tooth would be developed in the part of the jaw so occupied by the curved bases of the incisors, and hence a diastema or toothless space would intervene between the molars and incisors of this lower jaw, as in the upper jaw of the *Toxodon*.

It is interesting, also, to observe, that as the deviations from the Rodent type, which occur in the cranium of the *Toxodon*, are the same, in some instances, as those which obtain in the Wombat; so we find a corresponding deviation in the size and relative position of the inferior incisors, which, as in the Wombat, terminate anterior to the molar teeth, instead of extending backwards beyond the last grinder, as in most of the true Rodents. The Capybara presents the nearest approach to this structure, the pulps of the inferior incisors being situated opposite the interspace of the first and second grinders.

The molar teeth, in this mutilated lower jaw, like those in the upper jaw of *Toxodon*, had persistent pulps, as is proved by the conical cavity at their base, as represented in fig. 3; they consequently required a deep socket, and a corresponding depth of jaw to form the socket and protect the pulps. In order to economise space, and to increase the power of resistance in the tooth, and perhaps, also, to diminish the effects of direct pressure on the highly vascular and sensible matrix, we find the molars and their sockets are curved, but in a less degree than those of the upper jaw of the *Toxodon*. They correspond, however, with the superior molars of the *Toxodon* in the antero-posterior diameter, in being small and simple at the anterior part of the jaw, and by increasing in magnitude and complexity as they are situated more posteriorly. They are, however, narrower from side to side; but supposing them to belong to the *Toxodon*, it would agree in this respect with most other large herbivorous mammalia;—the fixed surface for attrition in the upper jaw being from obvious principles more extensive than the opposed moveable surface in the lower jaw.

The first grinder, in the lower jaw here described (Pl. V. fig. 2), is of small size and simple structure, being surrounded with a coating of enamel of uniform thickness, and without any fold penetrating the substance of the tooth. It is more curved than any of the other molars, and appears to have differed from the external incisor only in its entire coating of enamel and direction of growth; it is interesting, indeed, to find so gradual a transition, in structure, from molar to incisive teeth,